

**In the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claim 1 (withdrawn):        A recombinant DNA construct comprising a plant centromere.

Claim 2 (withdrawn):        The recombinant DNA construct of claim 1, which additionally comprises a telomere.

Claim 3 (withdrawn):        The recombinant DNA construct of claim 2, wherein the telomere is a plant telomere.

Claim 4 (withdrawn):        The recombinant DNA construct of claim 3, wherein the plant telomere is an *Arabidopsis thaliana* telomere.

Claim 5 (withdrawn):        The recombinant DNA construct of claim 2, wherein the telomere is a yeast telomere.

Claim 6 (withdrawn):        The recombinant DNA construct of claim 1, which additionally comprises an autonomous replicating sequence (ARS).

Claim 7 (withdrawn):        The recombinant DNA construct of claim 6, wherein said ARS is a plant ARS.

Claim 8 (withdrawn):        The recombinant DNA construct of claim 6, wherein said plant ARS is an *Arabidopsis thaliana* ARS.

Claim 9 (withdrawn):        The recombinant DNA construct of claim 1, which additionally comprises a structural gene.

Claim 10 (withdrawn): The recombinant DNA construct of claim 9, wherein the structural gene comprises a selectable or screenable marker gene.

Claim 11 (withdrawn): The recombinant DNA construct of claim 9, which additionally comprises a second structural gene.

Claim 12 (withdrawn): The recombinant DNA construct of claim 9, wherein said structural gene is selected from the group consisting of an antibiotic resistance gene, a herbicide resistance gene, a nitrogen fixation gene, a plant pathogen defense gene, a plant stress-induced gene, a toxin gene, a receptor gene, a ligand gene and a seed storage gene.

Claim 13 (withdrawn): The recombinant DNA construct of claim 12, wherein said construct is capable of expressing said structural gene.

Claim 14 (withdrawn): The recombinant DNA construct of claim 13, wherein said construct is capable of expressing said structural gene in a prokaryote.

Claim 15 (withdrawn): The recombinant DNA construct of claim 13, wherein said construct is capable of expressing said structural gene in a eukaryote.

Claim 16 (withdrawn): The recombinant DNA construct of claim 15, wherein said eukaryote is a higher eukaryote.

Claim 17 (withdrawn): The recombinant DNA construct of claim 16, wherein said higher eukaryote is a plant.

Claim 18 (withdrawn): The recombinant DNA construct of claim 9, wherein said structural gene is selected from the group consisting of a hormone gene, an enzyme gene, an interleukin gene, a clotting factor gene, a cytokine gene, an antibody gene, and a growth factor gene.

Claim 19 (withdrawn): The recombinant DNA construct of claim 18, wherein said construct is capable of expressing said structural gene.

Claim 20 (withdrawn): The recombinant DNA construct of claim 19, wherein said construct is capable of expressing said structural gene in a prokaryote.

Claim 21 (withdrawn): The recombinant DNA construct of claim 19, wherein said construct is capable of expressing said structural gene in a eukaryote.

Claim 22 (withdrawn): The recombinant DNA construct of claim 21, wherein said eukaryote is a higher eukaryote.

Claim 23 (withdrawn): The recombinant DNA construct of claim 22, wherein said higher eukaryote is a plant.

Claim 24 (withdrawn): The recombinant DNA construct of claim 1, further defined as a plasmid.

Claim 25 (withdrawn): The recombinant DNA construct of claim 24, wherein the plasmid comprises an origin of replication.

Claim 26 (withdrawn): The recombinant DNA construct of claim 25, wherein the origin of replication functions in bacteria.

Claim 27 (withdrawn): The recombinant DNA construct of claim 26, wherein the origin of replication functions in *E. coli*.

Claim 28 (withdrawn): The recombinant DNA construct of claim 26, wherein the origin of replication functions in *Agrobacterium*.

Claim 29 (withdrawn): The recombinant DNA construct of claim 25, wherein the origin of replication functions in plants.

Claim 30 (withdrawn): The recombinant DNA construct of claim 25, wherein the origin of replication functions in yeast.

Claim 31 (withdrawn): The recombinant DNA construct of claim 30, wherein said yeast is *S. cerevisiae*.

Claim 32 (withdrawn): The recombinant DNA construct of claim 24, wherein the plasmid comprises a selection marker.

Claim 33 (withdrawn): The recombinant DNA construct of claim 32, wherein the selection marker functions in bacteria.

Claim 34 (withdrawn): The recombinant DNA construct of claim 32, wherein the selection marker functions in *E. coli*.

Claim 35 (withdrawn): The recombinant DNA construct of claim 32, wherein the selection marker functions in *Agrobacterium*.

Claim 36 (withdrawn): The recombinant DNA construct of claim 32, wherein the selection marker functions in plants.

Claim 37 (withdrawn): The recombinant DNA construct of claim 32, wherein the selection marker functions in yeast.

Claim 38 (withdrawn): The recombinant DNA construct of claim 37, wherein said yeast is *S. cerevisiae*.

Claim 39 (withdrawn): The recombinant DNA construct of claim 1, which is capable of being maintained as a chromosome, wherein said chromosome is transmitted in dividing cells.

Claim 40 (withdrawn): The recombinant DNA construct of claim 1, wherein said plant centromere is an *Arabidopsis thaliana* centromere.

Claim 41 (withdrawn): The recombinant DNA construct of claim 40, wherein said plant centromere is an *Arabidopsis thaliana* chromosome 1 centromere.

Claim 42 (withdrawn): The recombinant DNA construct of claim 41, wherein said centromere is flanked by the genetic markers T22C23-T7 and T3P8-SP6.

Claim 43 (withdrawn): The recombinant DNA construct of claim 42, wherein the centromere is further defined as flanked by the genetic markers T22C23-T7 and T5D18, T22C23-T7 and T3L4, T5D18 and T3P8-SP6, T5D18 and T3L4, and T3L4 and T3P8-SP6.

Claim 44 (withdrawn): The recombinant DNA construct of claim 40, wherein said plant centromere comprises an *Arabidopsis thaliana* chromosome 2 centromere.

Claim 45 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 100 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 46 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 500 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 47 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 1,000 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 48 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 10,000 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 49 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 20,000 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 50 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 40,000 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 51 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 80,000 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 52 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 150,000 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 53 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 300,000 to about 611,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:209.

Claim 54 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises the nucleic acid sequence of SEQ ID NO:209.

Claim 55 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 100 to about 50,959 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:210.

Claim 56 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 500 to about 50,959 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:210.

Claim 57 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 1,000 to about 50,959 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:210.

Claim 58 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 5,000 to about 50,959 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:210.

Claim 59 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 10,000 to about 50,959 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:210.

Claim 60 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 20,000 to about 50,959 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:210.

Claim 61 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 30,000 to about 50,959 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:210.

Claim 62 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises from about 40,000 to about 50,959 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:210.

Claim 63 (withdrawn): The recombinant DNA construct of claim 44, wherein said centromere comprises the nucleic acid sequence of SEQ ID NO:210.

Claim 64 (withdrawn): The recombinant DNA construct of claim 40, wherein said plant centromere is an *Arabidopsis thaliana* chromosome 3 centromere.

Claim 65 (withdrawn): The recombinant DNA construct of claim 62, wherein centromere is further defined as flanked by the genetic markers T9G9-SP6 and T5M 14-SP6.

Claim 66 (withdrawn): The recombinant DNA construct of claim 65, wherein the centromere is still further defined as flanked by a pair of genetic markers selected from the group consisting of T9G9-SP6 and T14H20, T9G9-SP6 and T7K14, T9G9-SP6 and T21P20, T14H20 and T7K14, T14H20 and T21P20, T14H20 and T5M14-SP6, T7K14 and T5M14-SP6, T7K 14 and T21 P20, and T21 P20 and T5M 14-SP6.

Claim 67 (withdrawn): The recombinant DNA construct of claim 40, wherein said plant centromere is an *Arabidopsis thaliana* chromosome 4 centromere.

Claim 68 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 100 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 69 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 500 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 70 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 1,000 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 71 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 5,000 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.



Claim 72 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 10,000 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 73 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 50,000 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 74 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 100,000 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 75 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 200,000 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 76 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 400,000 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 77 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 800,000 to about 1,082,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:211.

Claim 78 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises the nucleic acid sequence of SEQ ID NO:211.

Claim 79 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 100 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:212.

Claim 80 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 500 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:212.

Claim 81 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 1,000 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:212.

Claim 82 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 5,000 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:212.

Claim 83 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 10,000 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:212.

Claim 84 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 30,000 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:212.

Claim 85 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 50,000 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:212.

Claim 86 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 80,000 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ M NO:212.

Claim 87 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises from about 120,000 to about 163,317 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:212.

Claim 88 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises the nucleic acid sequence of SEQ ID NO:212.

Claim 89 (withdrawn): The recombinant DNA construct of claim 40, wherein said plant centromere is an *Arabidopsis thaliana* chromosome 5 centromere.

Claim 90 (withdrawn): The recombinant DNA construct of claim 89, wherein said centromere is flanked by the genetic markers F13K20-T7 and CUE 1.

Claim 91 (withdrawn): The recombinant DNA construct of claim 90, wherein said centromere is flanked by a pair of genetic markers selected from the group consisting of F13K20-T7 and T18M4, F13 K20-T7 and T18F2, F13 K20-T7 and T24I20, T18M4 and T18F2, T18M4 and T24I20, T18M4 and CUE1, T18F2 and T24I20, T18F2 and CUE1, and T24I20 and CUE1.

Claim 92 (withdrawn): The recombinant DNA construct of claim 1, comprising n copies of a repeated nucleotide sequence, wherein n is at least 2.

Claim 93 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 5 to about 100,000.

Claim 94 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 10 to about 80,000.

Claim 95 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 25 to about 60,000.

Claim 96 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 100 to about 50,000.

Claim 97 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 200 to about 40,000.

Claim 98 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 400 to about 30,000.

Claim 99 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 1,000 to about 30,000.

Claim 100 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 5,000 to about 20,000.

Claim 101 (withdrawn): The recombinant DNA construct of claim 92, wherein n is from about 10,000 to about 15,000.

Claim 102 (withdrawn): The recombinant DNA construct of claim 92, wherein said repeated nucleotide sequence is isolatable from the nucleic acid sequence given by SEQ ID NO: 184, SEQ ID NO:185, SEQ ID NO:186, SEQ ID NO:187, SEQ ID NO:188, SEQ ID NO:189, SEQ ID NO:190, SEQ ID NO:191, SEQ ID NO:192, SEQ ID NO:193, SEQ ID NO:194, SEQ ID NO:195, SEQ ID NO:196, SEQ ID NO: 197, SEQ ID NO:198, SEQ ID NO:199, SEQ ID NO:200, SEQ M NO:201, SEQ ID NO:202, SEQ ID NO:203, SEQ ID NO:204, SEQ ID NO:205, SEQ ID NO:206, SEQ ID NO:207, SEQ ID NO:208, SEQ ID NO:209, SEQ ID NO:210, SEQ ID NO:211 or SEQ ID NO:212.

Claim 103 (withdrawn): A minichromosome vector comprising a plant centromere and a telomere sequence.

Claim 104 (withdrawn): The minichromosome vector of claim 103, comprising an autonomous replicating sequence.

Claim 105 (withdrawn): The minichromosome vector of claim 103, comprising a second telomere sequence.

Claim 106 (withdrawn): The minichromosome vector of claim 103, comprising a structural gene.

Claim 107 (withdrawn): The minichromosome vector of claim 103, further defined as comprising a second structural gene.

Claim 108 (withdrawn): The minichromosome vector of claim 103, further defined as comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO: 1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO: 10, SEQ ID NO: 11, SEQ ID NO:12, SEQ ID NO: 13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO: 19, SEQ ID NO:20, and SEQ ID NO:21.

Claim 109 (withdrawn): A cell transformed with a recombinant DNA construct comprising a plant centromere.

Claim 110 (withdrawn): The cell of claim 109, wherein said cell is a prokaryotic cell.

Claim 111 (withdrawn): The cell of claim 109, wherein said cell is a eukaryotic cell.

Claim 112 (withdrawn): The cell of claim 111, wherein said cell is a yeast cell.

Claim 113 (withdrawn): The cell of claim 109, wherein said cell is a higher eukaryotic cell.

Claim 114 (withdrawn): The cell of claim 113, wherein said higher eukaryotic cell is a plant cell.

Claim 115 (withdrawn): The cell of claim 114, wherein said plant cell is from a dicotyledonous plant.

Claim 116 (withdrawn): The cell of claim 115, wherein said dicotyledonous plant is selected from the group consisting of group consisting of tobacco, tomato, potato, sugar beet, pea, carrot, cauliflower, broccoli, soybean, canola, sunflower, alfalfa, cotton and *Arabidopsis*.

Claim 117 (withdrawn): The cell of claim 116, wherein said dicotyledonous plant is *Arabidopsis thaliana*.

Claim 118 (withdrawn): The cell of claim 114, wherein said plant cell is from a monocotyledonous plant.

Claim 119 (withdrawn): The cell of claim 118, wherein said monocotyledonous plant is selected from the group consisting of wheat, maize, rye, rice, turfgrass, oat, barley, sorghum, millet, and sugarcane.

Claim 120 (withdrawn): The cell of claim 109, wherein the plant centromere is an *Arabidopsis thaliana* centromere.

Claim 121 (withdrawn): The cell of claim 120, further defined as an *Arabidopsis thaliana* cell.

Claim 122 (withdrawn): The cell of claim 109, wherein said recombinant DNA construct comprises a telomere.

Claim 123 (withdrawn): The cell of claim 109, wherein said recombinant DNA construct comprises an autonomous replicating sequence (ARS).

Claim 124 (withdrawn): The cell of claim 109, wherein said recombinant DNA construct comprises a structural gene.

Claim 125 (withdrawn): The cell of claim 124, wherein the structural gene comprises a selectable or screenable marker gene.

Claim 126 (withdrawn): The cell of claim 124, wherein said recombinant DNA construct comprises a second structural gene.

Claim 127 (withdrawn): The cell of claim 124, further defined as capable of expressing said structural gene.

Claims 128-131 (canceled)

Claim 132 (previously presented): A method of preparing a transgenic plant cell comprising contacting a starting plant cell with a recombinant DNA construct comprising a plant centromere, whereby said starting plant cell is transformed with said recombinant DNA construct and wherein the plant centromere is an *Arabidopsis thaliana* centromere.

Claim 133 (currently amended): ~~The method of claim 132,~~ A method of preparing a transgenic plant cell comprising contacting a starting plant cell with a recombinant DNA construct comprising a plant centromere, whereby said starting plant cell is transformed with said recombinant DNA construct, wherein the plant centromere is an *Arabidopsis thaliana* centromere, and wherein said starting plant cell is an *Arabidopsis thaliana* cell.

Claims 134-140 (canceled)

Claim 141 (previously presented): A transgenic plant comprising a minichromosome vector, wherein said vector comprises a plant centromere and a telomere sequence and wherein said minichromosome vector comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, and SEQ ID NO:21.

Claim 142 (previously presented): The transgenic plant of claim 141, further defined as a dicotyledonous plant.

Claim 143 (previously presented): The transgenic plant of claim 142, wherein said dicotyledonous plant is selected from the group consisting of tobacco, tomato, potato, sugar beet, pea, carrot, cauliflower, broccoli, soybean, canola, sunflower, alfalfa, cotton and *Arabidopsis*.

Claim 144 (previously presented): The transgenic plant of claim 142, wherein the dicotyledonous plant is *Arabidopsis thaliana*.

Claims 145-146 (canceled)

Claim 147 (withdrawn): A method of producing a minichromosome vector comprising:

(a) obtaining a first vector and a second vector, wherein said first vector or said second vector comprises a selectable or screenable marker, an origin of replication, a telomere, and a plant centromere, and wherein said first vector and said second vector comprises a site for site-specific recombination; and

(b) contacting said first vector with said second vector to allow site-specific recombination to occur between said site for site-specific recombination on said first vector and said site for site-specific recombination on said second vector to create a minichromosome vector comprising said selectable or screenable marker, said origin of replication, said telomere and said plant centromere.



Claim 148 (withdrawn): The method of claim 147, wherein said contacting is done *in vitro*.

Claim 149 (withdrawn): The method of claim 148, wherein said contacting is done *in vivo*.

Claim 150 (withdrawn): The method of claim 149, wherein said contacting is carried out in a prokaryotic cell.

Claim 151 (withdrawn): The method of claim 150, wherein said prokaryotic cell is an *Agrobacterium cell*.

Claim 152 (withdrawn): The method of claim 150, wherein said prokaryotic cell is an *E. coli* cell.

Claim 153 (withdrawn): The method of claim 149, wherein said contacting is carried out in lower eukaryotic cell.

Claim 154 (withdrawn): The method of claim 153, wherein said lower eukaryotic cell is a yeast cell.

Claim 155 (withdrawn): The method of claim 149, wherein said contacting is carried out in a higher eukaryotic cell.

Claim 156 (withdrawn): The method of claim 155, wherein said higher eukaryotic cell is a plant cell.

Claim 157 (withdrawn): The method of claim 156, wherein said plant cell is an *Arabidopsis thaliana* cell.

Claim 158 (withdrawn): The method of claim 147, wherein said contacting is done in the presence of a recombinase.

Claim 159 (withdrawn): The method of claim 158, wherein said recombinase is selected from the group consisting of Cre, Flp, Gin, Pin, Sre, pinD, Int-B13, and R.

Claim 160 (withdrawn): The method of claim 147, wherein said first vector or said second vector comprises border sequences for *Agrobacterium*-mediated transformation.

Claim 161 (withdrawn): The method of claim 147, wherein said plant centromere is an *Arabidopsis thaliana* centromere.

Claim 162 (withdrawn): The method of claim 147, wherein said telomere is a plant telomere.

Claim 163 (withdrawn): The method of claim 147, wherein said plant selectable or screenable marker is selected from the group consisting of GFP, GUS, BAR, PAT, HPT or NPTII.

Claim 164 (withdrawn): A method of screening a candidate centromere sequence for plant centromere activity, said method comprising the steps of:

- (a) obtaining an isolated nucleic acid sequence comprising a candidate centromere sequence;
- (b) integratively transforming plant cells with said isolated nucleic acid; and
- (c) screening for centromere activity of said candidate centromere sequence.

Claim 165 (withdrawn): The method of claim 164, wherein said screening comprises observing a phenotypic effect present in the integratively transformed plant cells or plants comprising said plant cells, wherein said phenotypic effect is absent in a control plant cell not integratively transformed with said isolated nucleic acid sequence, or a plant comprising said control plant cell.

Claim 166 (withdrawn): The method of claim 165, wherein said phenotypic effect is selected from the group consisting of: reduced viability, reduced efficiency of said transforming, genetic instability in the integratively transformed nucleic acid, aberrant plant sectors, increased ploidy, aneuploidy, and increased integrative transformation in distal or centromeric chromosome regions.

Claim 167 (withdrawn): The method of claim 164, wherein said isolated nucleic acid sequence comprises a bacterial artificial chromosome.

Claim 168 (withdrawn): The method of claim 167, wherein said bacterial artificial chromosome is further defined as a binary bacterial artificial chromosome.

Claim 169 (withdrawn): The method of claim 164, wherein said integratively transforming comprises use of *Agrobacterium*-mediated transformation.

Claim 170 (withdrawn): The method of claim 164, wherein said control plant cell has been integratively transformed with a nucleic acid sequence other than a candidate centromere sequence.

Claim 171 (withdrawn): A recombinant DNA construct comprising an *Arabidopsis* polyubiquitin 11 promoter, wherein said promoter comprises from about 25 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 180.

Claim 172 (withdrawn): The recombinant DNA construct of claim 171, wherein said wherein said promoter comprises from about 75 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 180.

Claim 173 (withdrawn): The recombinant DNA construct of claim 171, wherein said wherein said promoter comprises from about 125 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 180.

Claim 174 (withdrawn): The recombinant DNA construct of claim 171, wherein said wherein said promoter comprises from about 200 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 180.

Claim 175 (withdrawn): The recombinant DNA construct of claim 171, wherein said wherein said promoter comprises from about 400 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 180.

Claim 176 (withdrawn): The recombinant DNA construct of claim 171, wherein said wherein said promoter comprises from about 800 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 180.

Claim 177 (withdrawn): The recombinant DNA construct of claim 171, wherein said wherein said promoter comprises from about 1,000 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 180.

Claim 178 (withdrawn): The recombinant DNA construct of claim 171, wherein said promoter comprises the nucleic acid sequence of SEQ ID NO: 180.

Claim 179 (withdrawn): The recombinant DNA construct of claim 171, further comprising an enhancer.

Claim 180 (withdrawn): The recombinant DNA construct of claim 171, further comprising a telomere sequence.

Claim 181 (withdrawn): The recombinant DNA construct of claim 171, further comprising a plant centromere sequence.

Claim 182 (withdrawn): The recombinant DNA construct of claim 171, further comprising an ARS.

Claim 183 (withdrawn): The recombinant DNA construct of claim 171, wherein said promoter is operably linked to a structural gene.

Claim 184 (withdrawn): The recombinant DNA construct of claim 183, wherein said structural gene is selected from the group consisting of an antibiotic resistance gene, a herbicide resistance gene, a nitrogen fixation gene, a plant pathogen defense gene, a plant stress-induced gene, a toxin gene, a receptor gene, a ligand gene and a seed storage gene.

Claim 185 (withdrawn): The recombinant DNA construct of claim 183, wherein said structural gene is selected from the group consisting of a hormone gene, an enzyme gene, an interleukin gene, a clotting factor gene, a cytokine gene, an antibody gene, and a growth factor gene.

Claim 186 (withdrawn): A recombinant DNA construct comprising an *Arabidopsis* 40S ribosomal protein S16 promoter, wherein said promoter comprises from about 25 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 182.

Claim 187 (withdrawn): The recombinant DNA construct of claim 186, wherein said wherein said promoter comprises from about 75 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO:182.

Claim 188 (withdrawn): The recombinant DNA construct of claim 186, wherein said wherein said promoter comprises from about 125 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 182.

Claim 189 (withdrawn): The recombinant DNA construct of claim 186, wherein said wherein said promoter comprises from about 200 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 182.

Claim 190 (withdrawn): The recombinant DNA construct of claim 186, wherein said wherein said promoter comprises from about 400 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 182.

Claim 191 (withdrawn): The recombinant DNA construct of claim 186, wherein said wherein said promoter comprises from about 800 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 182.

Claim 192 (withdrawn): The recombinant DNA construct of claim 186, wherein said wherein said promoter comprises from about 1,000 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 182.

Claim 193 (withdrawn): The recombinant DNA construct of claim 186, wherein said promoter comprises the nucleic acid sequence of SEQ ID NO: 182.

Claim 194 (withdrawn): The recombinant DNA construct of claim 186, further comprising an enhancer.

Claim 195 (withdrawn): The recombinant DNA construct of claim 186, further comprising a telomere sequence.

Claim 196 (withdrawn): The recombinant DNA construct of claim 186, further comprising a plant centromere sequence.

Claim 197 (withdrawn): The recombinant DNA construct of claim 186, further comprising an ARS.

Claim 198 (withdrawn): The recombinant DNA construct of claim 186, wherein said promoter is operably linked to a structural gene.

Claim 199 (withdrawn): The recombinant DNA construct of claim 198, wherein said structural gene is selected from the group consisting of an antibiotic resistance gene, a herbicide resistance gene, a nitrogen fixation gene, a plant pathogen defense gene, a plant stress-induced gene, a toxin gene, a receptor gene, a ligand gene and a seed storage gene.

Claim 200 (withdrawn): The recombinant DNA construct of claim 198, wherein said structural gene is selected from the group consisting of a hormone gene, an enzyme gene, an interleukin gene, a clotting factor gene, a cytokine gene, an antibody gene, and a growth factor gene.

Claim 201 (withdrawn): A recombinant DNA construct comprising an *Arabidopsis* polyubiquitin 11 3' regulatory sequence, wherein said 3' regulatory sequence comprises from about 25 to about 2001 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 181.

Claim 202 (withdrawn): The recombinant DNA construct of claim 201, wherein said wherein said 3' regulatory sequence comprises from about 75 to about 2001 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 181.

Claim 203 (withdrawn): The recombinant DNA construct of claim 201, wherein said wherein said 3' regulatory sequence comprises from about 125 to about 2001 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 181.

Claim 204 (withdrawn): The recombinant DNA construct of claim 201, wherein said wherein said 3' regulatory sequence comprises from about 200 to about 2001 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 181.

Claim 205 (withdrawn): The recombinant DNA construct of claim 201, wherein said wherein said 3' regulatory sequence comprises from about 400 to about 2001 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 181.

Claim 206 (withdrawn): The recombinant DNA construct of claim 201, wherein said wherein said 3' regulatory sequence comprises from about 800 to about 2001 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 181.

Claim 207 (withdrawn): The recombinant DNA construct of claim 201, wherein said wherein said 3' regulatory sequence comprises from about 1,000 to about 2,001 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 181.

Claim 208 (withdrawn): The recombinant DNA construct of claim 201, wherein said 3' regulatory sequence comprises the nucleic acid sequence of SEQ ID NO: 181.

Claim 209 (withdrawn): The recombinant DNA construct of claim 201, further comprising an enhancer.

Claim 210 (withdrawn): The recombinant DNA construct of claim 201, further comprising a telomere sequence.

Claim 211 (withdrawn): The recombinant DNA construct of claim 201, further comprising a plant centromere sequence.

Claim 212 (withdrawn): The recombinant DNA construct of claim 201, further comprising an ARS.

Claim 213 (withdrawn): The recombinant DNA construct of claim 201, wherein said 3' regulatory sequence is operably linked to a structural gene.

Claim 214 (withdrawn): The recombinant DNA construct of claim 213, wherein said structural gene is selected from the group consisting of an antibiotic resistance gene, a herbicide resistance gene, a nitrogen fixation gene, a plant pathogen defense gene, a plant stress-induced gene, a toxin gene, a receptor gene, a ligand gene and a seed storage gene.



Claim 215 (withdrawn): The recombinant DNA construct of claim 213, wherein said structural gene is selected from the group consisting of a hormone gene, an enzyme gene, an interleukin gene, a clotting factor gene, a cytokine gene, an antibody gene, and a growth factor gene.

Claim 216 (withdrawn): A recombinant DNA construct comprising an *Arabidopsis* 40S ribosomal protein S 16 3' regulatory sequence, wherein said 3' regulatory comprises from about 25 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 183.

Claim 217 (withdrawn): The recombinant DNA construct of claim 216, wherein said wherein said 3' regulatory sequence comprises from about 75 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 183.

Claim 218 (withdrawn): The recombinant DNA construct of claim 216, wherein said wherein said 3' regulatory sequence comprises from about 125 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 183.

Claim 219 (withdrawn): The recombinant DNA construct of claim 216, wherein said wherein said 3' regulatory sequence comprises from about 200 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 183.

Claim 220 (withdrawn): The recombinant DNA construct of claim 216, wherein said wherein said 3' regulatory sequence comprises from about 400 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 183.

Claim 221 (withdrawn): The recombinant DNA construct of claim 216, wherein said wherein said 3' regulatory sequence comprises from about 800 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 183.

Claim 222 (withdrawn): The recombinant DNA construct of claim 216, wherein said wherein said 3' regulatory sequence comprises from about 1,000 to about 2,000 contiguous nucleotides of the nucleic acid sequence of SEQ ID NO: 183.

Claim 223 (withdrawn): The recombinant DNA construct of claim 216, wherein said 3' regulatory sequence comprises the nucleic acid sequence of SEQ ID NO: 183.

Claim 224 (withdrawn): The recombinant DNA construct of claim 216, further comprising an enhancer.

Claim 225 (withdrawn): The recombinant DNA construct of claim 216, further comprising a telomere sequence.

Claim 226 (withdrawn): The recombinant DNA construct of claim 216, further comprising a plant centromere sequence.

Claim 227 (withdrawn): The recombinant DNA construct of claim 216, further comprising an ARS.

Claim 228 (withdrawn): The recombinant DNA construct of claim 216, wherein said 3' regulatory sequence is operably linked to a structural gene.

Claim 229 (withdrawn): The recombinant DNA construct of claim 228, wherein said structural gene is selected from the group consisting of an antibiotic resistance gene, a herbicide resistance gene, a nitrogen fixation gene, a plant pathogen defense gene, a plant stress-induced gene, a toxin gene, a receptor gene, a ligand gene and a seed storage gene.

Claim 230 (withdrawn): The recombinant DNA construct of claim 228, wherein said structural gene is selected from the group consisting of a hormone gene, an enzyme gene, an interleukin gene, a clotting factor gene, a cytokine gene, an antibody gene, and a growth factor gene.

Claim 231 (withdrawn): The recombinant DNA construct of claim 67, wherein said centromere comprises at least about 100 contiguous nucleotides of the nucleic acid sequence selected from the group consisting of SEQ ID NO:184, SEQ ID NO:185, SEQ ID NO:186, SEQ ID NO: 187, SEQ ID NO:188, SEQ ID NO: 189, SEQ ID NO:190, SEQ ID NO: 191, SEQ ID NO: 192, SEQ ID NO:193, SEQ ID NO:194, SEQ ID NO:195, SEQ ID NO: 196, SEQ ID NO:197, SEQ ID NO:198, SEQ ID NO:199, SEQ ID NO:200, SEQ ID NO:201, SEQ ID NO:202, SEQ ID NO:203, SEQ ID NO:204, SEQ ID NO:205, SEQ ID NO:206, SEQ ID NO:207, and SEQ ID NO:208.